

Visualization Technology

Objective: Demonstrate visualization scaling to unprecedented concurrency levels by ingesting and processing unprecedentedly large datasets.

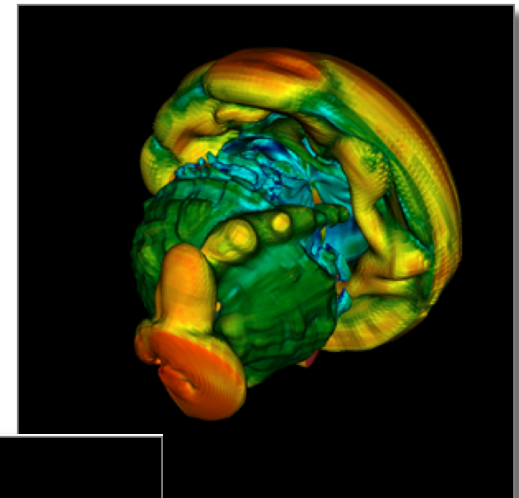
Implications: Visualization and analysis of Petascale datasets will require - and utilize - the I/O, memory, compute, and interconnect speeds of Petascale systems.

Accomplishments: Ran VisIt vis/analytcs SW on 16K and 32K cores of Franklin.

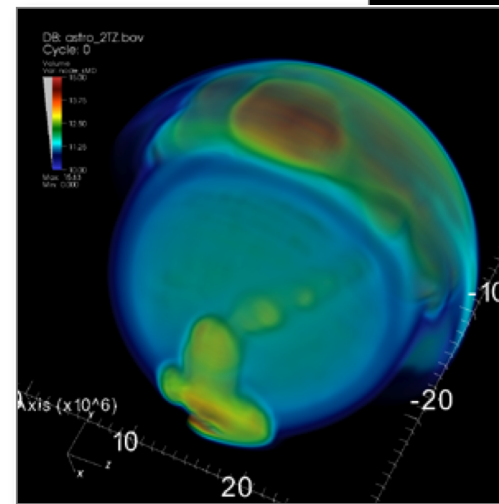
- First-ever visualization of two *trillion* zone problem (TBs per scalar); data loaded in parallel.
- Demonstrated that visualization R&D has produced technology that can ingest and process tomorrow's "datasets" today.
- VisIt is the only visual data analysis SW to be part of the ASCR Joule metric.

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Plots show 'inverse flux factor,' the ratio of neutrino intensity to neutrino flux, from an ORNL 3D supernova simulation using CHIMERA.



a



Isocontours (a) and volume rendering (b) of two trillion zones on 32K cores of Franklin.